be made and equivalence may e substituted for elements thereof without departing from the scope of the present invention. In addition, modifications may be made to adapt a particular situation or material to the teachings of the present invention without departing from the scope of the present invention. Therefore, it is intended that the invention not be limited to the particular embodiments disclosed for carrying out this invention, but that the present invention includes all embodiments falling within the scope of the appended claims.

I claim:

1. A receiver for receiving and efficiently separating a composite 3-G wireless communication signal into its constituent base-band components, wherein said receiver combines multiple processing tasks of a conventional receiver in two entities comprising an equal-ripple linear phase recursive filter channelizer and an equal-ripple linear recursive interpolator, and the channelizer entity performs the processing required for multiple channels in a single device.

2. A receiver as claimed in claim 1 wherein the tasks of spectral translation, of bandwidth reduction, and of interpolation to change sample rate by a rational ratio are embedded in a resampling polyphase filter bank, and the single polyphase filter can operate in a non-resampling mode so that the sample rate change is performed in the post channelizer interpolator, the single polyphase filter also operates in a resampling mode so that one part of the sample rate change is performed in the channelizer, and another part is performed in the post channelizer interpolator.

3. A receiver as claimed in claim 1 comprising moving the input heterodynes into and through the filtering operation so that the spectral translations occur after the filtering to permit a single filter to service multiple channels.

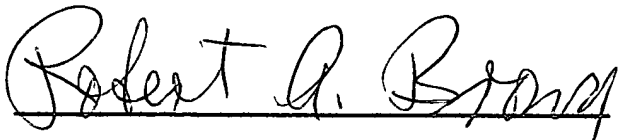
4. A method for constructing overlapped spectral bands in a polyphase filter bank comprising the step of overlapping bands to permit undistorted access to signals with spectral content located at band edges of a channelizer that does not support overlapped spectra.

5. A method of cascading polyphase filters to effect an intial channelization comprising the steps of applying a first layer of translation, bandwidth reduction, and sample rate change, and applying a second layer of translation, bandwidth reduction, and sample rate change.

It is respectfully contended that this case is now in proper order for an action on the merits. Accordingly, an early allowance is respectfully solicited.

Respectfully submitted,

FREDRIC J. HARRIS



Robert A. Brown, Reg. No. 26,149

P. O. Box 2127

Northbrook, Illinois 60065-2127